

## ABSTRACT

A problem of the invention is to provide an actuator which can exhibit a strong driving force while being kept compact in size and a brake system using the same.

5        Since the actuator of the invention has an electric motor 11, a screw shaft 18 connected to a rotational shaft 11a of the electric motor 11 in such a manner as to be capable of transmitting power, a cylindrical member 17 disposed on the circumference of the screw shaft 18 and  
10       connected to the rotational shaft 11a of the electric motor 11 in such a manner as to be capable of transmitting power and balls 23 which roll within spiral grooves 17b, 18b formed between the screw shaft 18 and the cylindrical member 17 and the rotational speed of the screw shaft  
15       18 and the rotational speed of the cylindrical member 17 are different, in the event that the cylindrical member 17 is rotated relative to the screw shaft 18 at a low rotational speed, the cylindrical member 18 moves in an axial direction according to the relative rotation, and  
20       therefore, in the event that the amount of the relative rotation is made small, a large reduction ratio can be provided in the axial movement of the cylindrical member 17 relative to the rotation of the screw shaft 18 without changing the lead angle of the ball screw or depending  
25       upon other transmission systems.